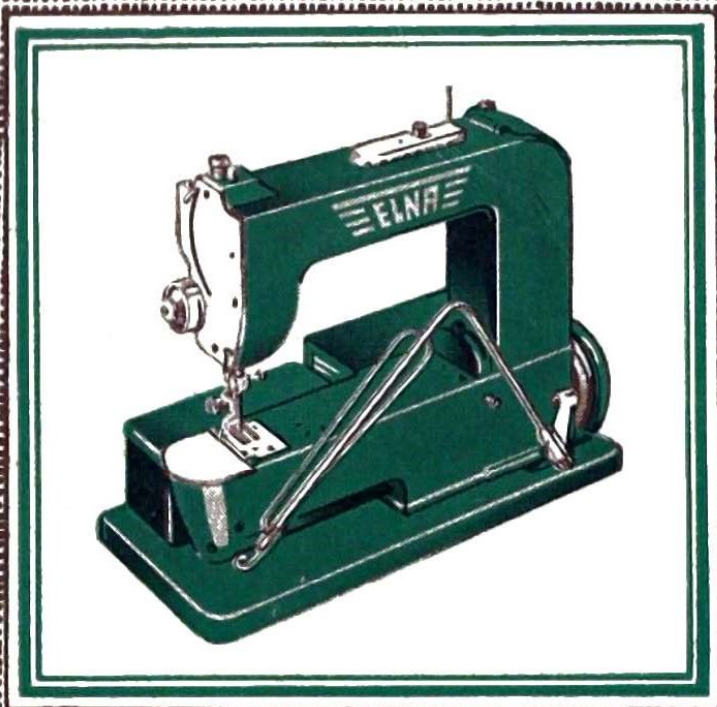




*How I Should Use my
Sewing-Machine*

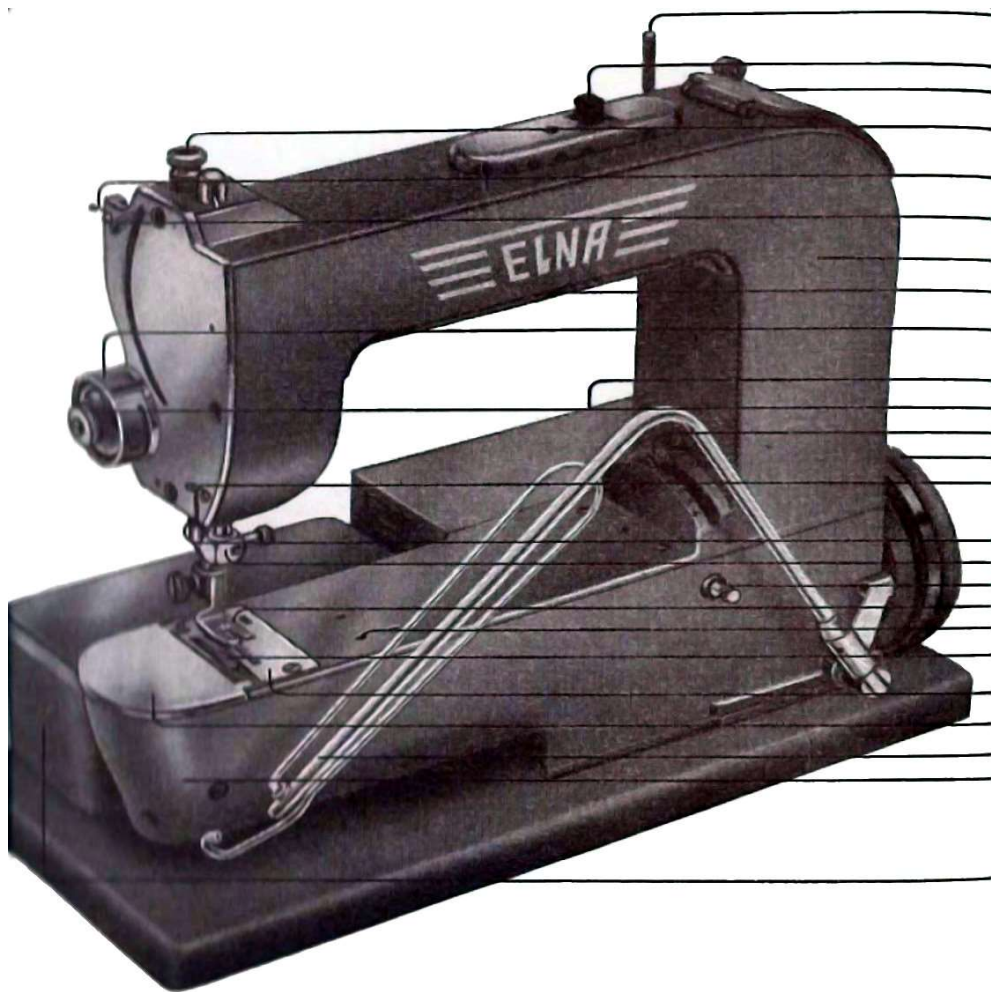


Fig. 1

- Spool pin
- Light switch lever
- Cover to upper casing
- Pressure regulating screw for presser foot
- Upper thread guide
- Thread take-up lever
- Upper casing
- Recessed light
- Upper thread tension device
- Motor casing
- Tension regulating thumb nut
- Stitch regulating lever
- Fly wheel
- Lower thread guide
- Cloth presser bar with threadcutter
- Needle clamp
- Screw for fixation of stitch regulating lever
- Presser foot
- Screw-hole for mounting special accessories
- Feed dog
- Throat plate
- Shuttle cover
- Knee control lever
- Open arm
- Accessory box

Please read these
instructions often and carefully

Unpacking



- 1 Remove case from cardboard box.

- 2 Lay case on a table.



- 3 Take a sturdy screwdriver and remove the 4 screws and washers as well as the wooden slats.



- 4 Put the case upright.



- 5 Before removing the machine from the case, study the instruction booklet carefully.



- 6 Do not forget to lubricate the machine (see pages 8 and 11) and to place the driving belt over the motor pinion (page 12).

- 7 Any damage found on arrival must be reported immediately to the responsible carrier.



8

Carefully preserve all the packing material:

4 screws with washers

2 wooden slats

cardboard box



You will need this packing material again, if the machine must be sent in to us for repairs.

Opening the case

Place the case (handle towards you) on the table. Press the buttons (1) at either side of the cover with index fingers. (Fig. 2 a).

Pull the cover towards you, raising it to its vertical position.

To remove the machine from the case, first tilt it outwards as indicated in Fig. 2 b.

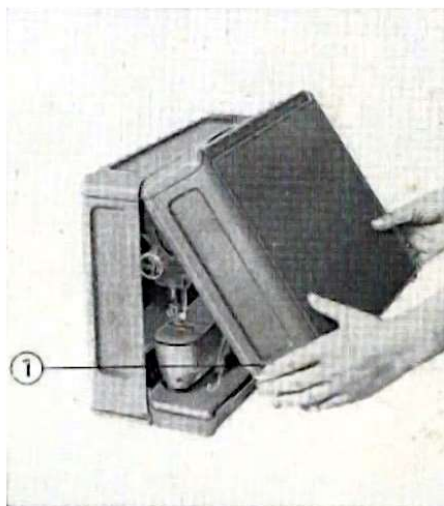


Fig. 2 a

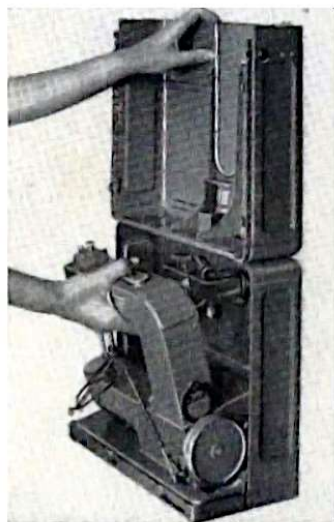


Fig. 2 b

Lowering the knee control lever

Place the machine about 5 $\frac{1}{2}$ inches away from the front edge of the table and remove the accessory box (1).

You can then swing out the knee control lever (2) over the edge of the table. In this position it can easily be operated with the right knee.

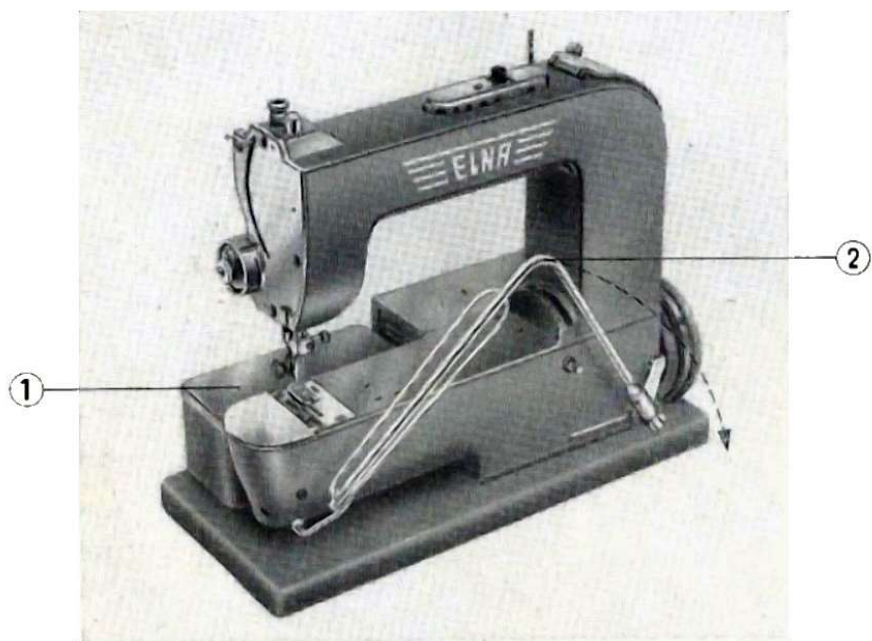


Fig. 3

Converting case into a table

(Fig. 4.)

Take hold of the case at the top with the left hand.

Remove the electric cord from its holder (1).

Grasp the floor of the case (2) in the middle and fold it upwards.

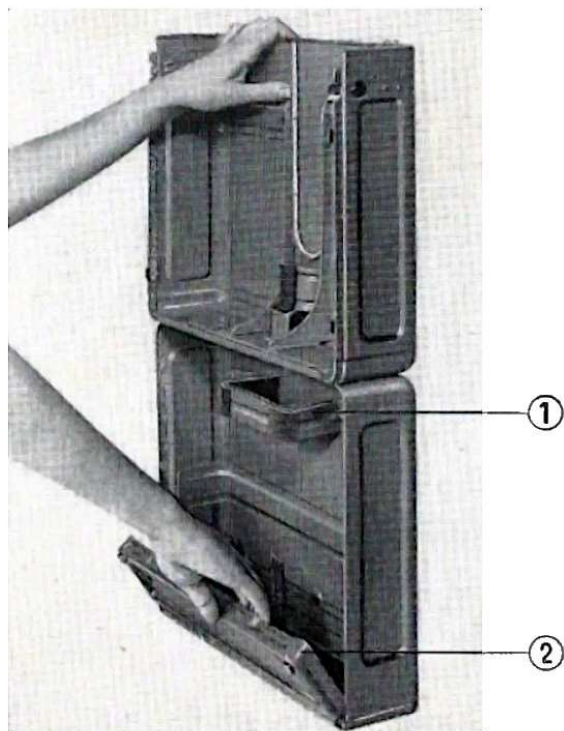


Fig. 4

(Fig. 5.)

Lay the open case on the table. Fold back plate (1) onto opposite half of case, and by sliding the case onto the open arm, a spacious, even work-table is obtained.

The case is equipped with rubber feet to protect the surface of the table or other furniture upon which it may be placed.

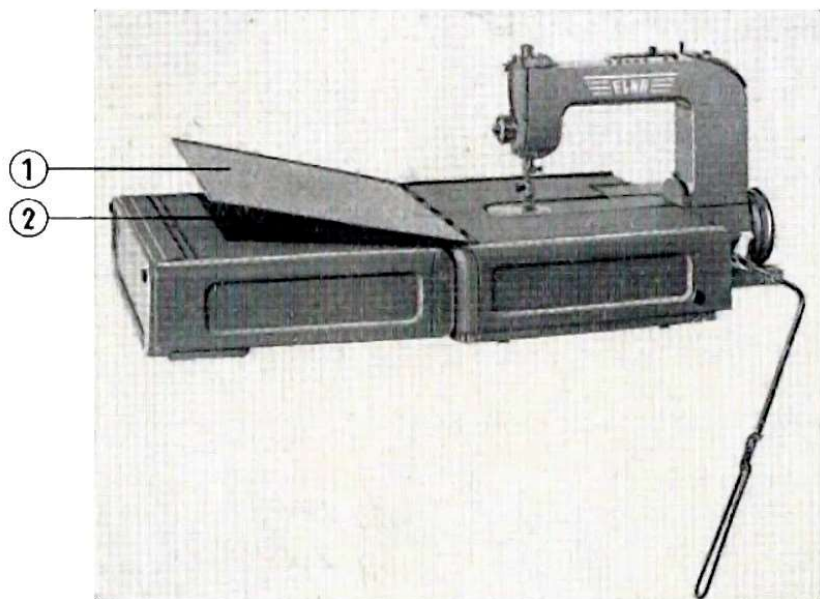


Fig. 5

Maintenance of the machine

In order to derive fullest satisfaction from your ELNA at all times over many years we would make the following recommendations :

1. To oil the machine correctly.

To insure proper and smooth running, your ELNA should be oiled every time before using. In the pages immediately following you will find a simple plan for oiling with all the important points illustrated. **Put two drops of oil** into each of the 17 oilholes, all of which are marked red. Concerning lubrication of the speed reducer see page 33.

For the shuttle, use **2 or 3 drops of kerosene** in one of the slots shown in Fig. 6 a, every time before using your machine.

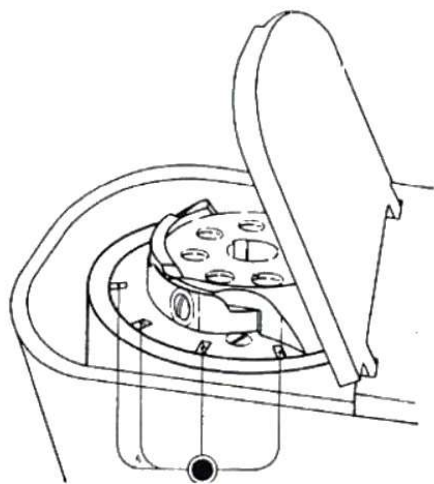


Fig. 6 a

2. Care of the machine in winter.

To enable the ELNA to function at normal speed during the winter in cold countries, bring it into a warm room a short time before using. The warmth will restore the oil to its proper viscosity which it may have lost due to the cold.

3. Cleaning the machine.

Lint around and in the shuttle may be removed by means of the dry, fine brush found in the accessory box. Blowing into the machine should be avoided (danger of rusting). Do not remove the shuttle from the machine at any time.



Fig. 6 b

To clean the feed dog, first remove the needle and the presser foot. Then lift out the throat plate by inserting the screw-driver into the slot and pressing slightly downwards.

(Fig. 6 b).

For throat plates without slots unscrew the two screws.

The teeth of the feed dog may be cleaned with a hard brush, the point of a needle, or a pair of tweezers.

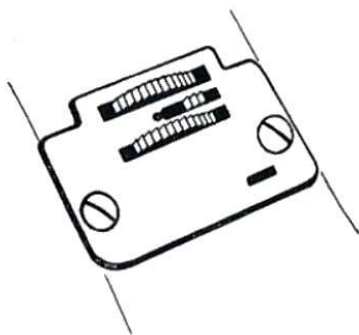


Fig. 6 c

When replacing the throat plate, the feed dog should be brought to **its highest position** by turning the fly wheel. Make sure that the plate is resting on an absolutely clean surface. Put it into place by fitting the teeth of the feed dog **into their appropriate slots** (fig. 6 c). Then press hard with your fingertips on the

plate near the screws until the press button system catches. **The plate, when correctly inserted, is on a level with the cover of the open arm.**

LUBRICATION

The points of oiling on your

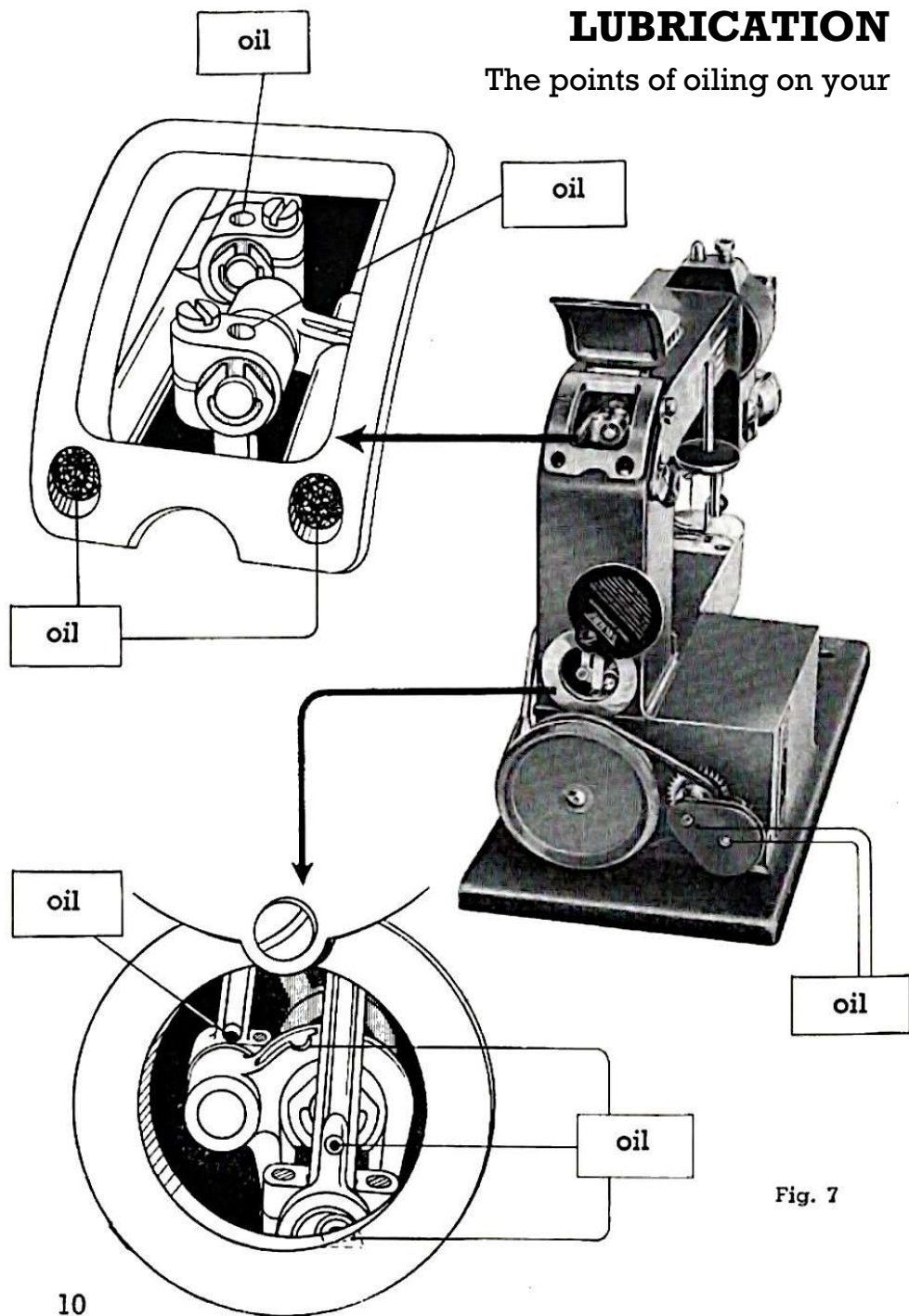
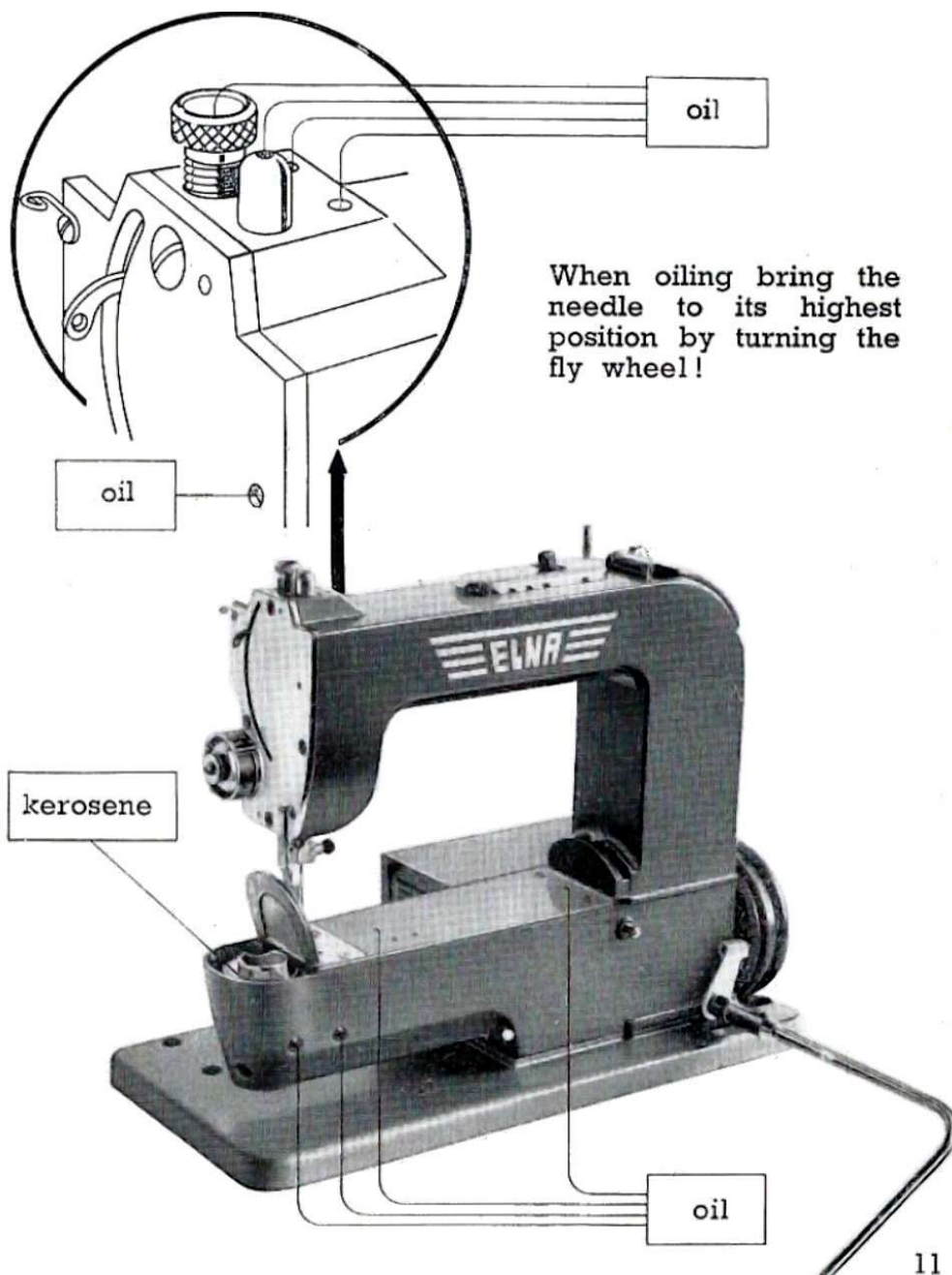


Fig. 7

CHART

machine are painted **red**



Connecting the machine to electric circuit

Place the driving belt on the fly wheel and the motor pinion.

Do not connect the machine with your electric power supply until you have made sure that the motor and lamp correspond with the voltage of your power supply.

If the voltage (direct or alternating current) of the electric power supply in your residence is unknown to you, you can find it printed on any light bulb or on the electric meter (but not on the plug).

If these indications do not correspond with those on the motor casing, do not connect your machine but communicate immediately with our distributors.

If you are using the machine away from home, remember to check the voltage of the electric power supply.

Once connected the machine is easily started by pressing the knee-lever to the right. Increased pressure increases the speed.

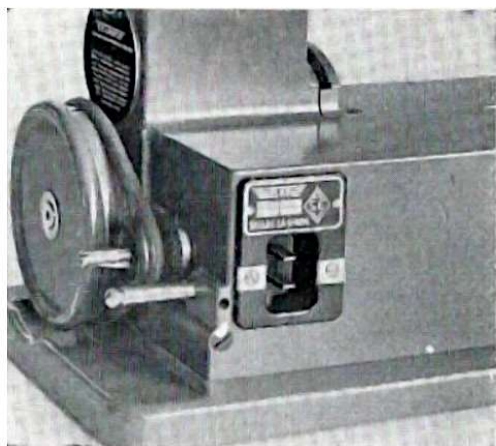


Fig. 8

Changing the light bulb

The voltage of the light bulb in your machine should be the same as that of your electric power supply. If this is not the case, change it.

The light bulb should not be changed while the machine is supplied with electric current.

First the electric plug should be removed. The light bulb is placed in the upper casing of the machine. The cover (1) may be opened by means of a slight pressure applied in the direction of the arrow. The bulb should be pressed slightly deeper into its socket, then turned and pulled out. The bulb is inserted in the same manner, but in the reverse order.

Close the cover (1) by means of a slight pressure upwards. The switch for the light (2) will be found on the upper arm.

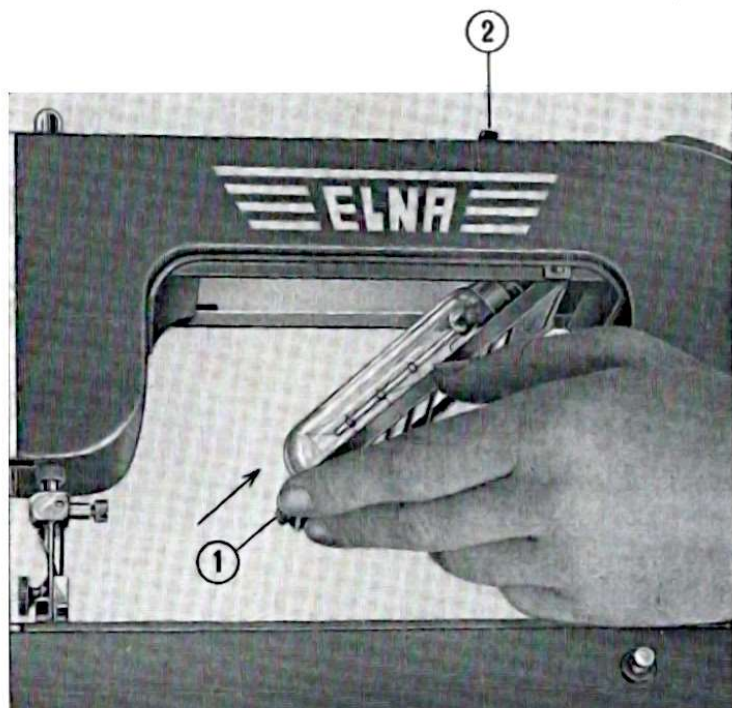


Fig. 9

Winding the bobbin

Place the spool of thread on the spool pin (1). Lower the thread guide arm (2) and pass the thread from the spool through the upper thread guide of the front plate. Bring thread back outside of the spool, slip it into the hook on the thread guide arm (2) and pass it over the roller (3) (Fig. 10 b.). Then place the bobbin on the motor axle (4), firmly pushing it against the motor pinion. The thread should then be wound several times by hand around the bobbin in the direction of the arrow (Fig. 10 c). Keep the motor in **slow motion** until the bobbin is wound with the desired quantity of thread. It is advisable to retain the spool lightly with your left hand to increase the tension on the thread when winding a bobbin.

As long as the bobbin is on the motor axle the machine will not sew and work can remain on machine without inconvenience.

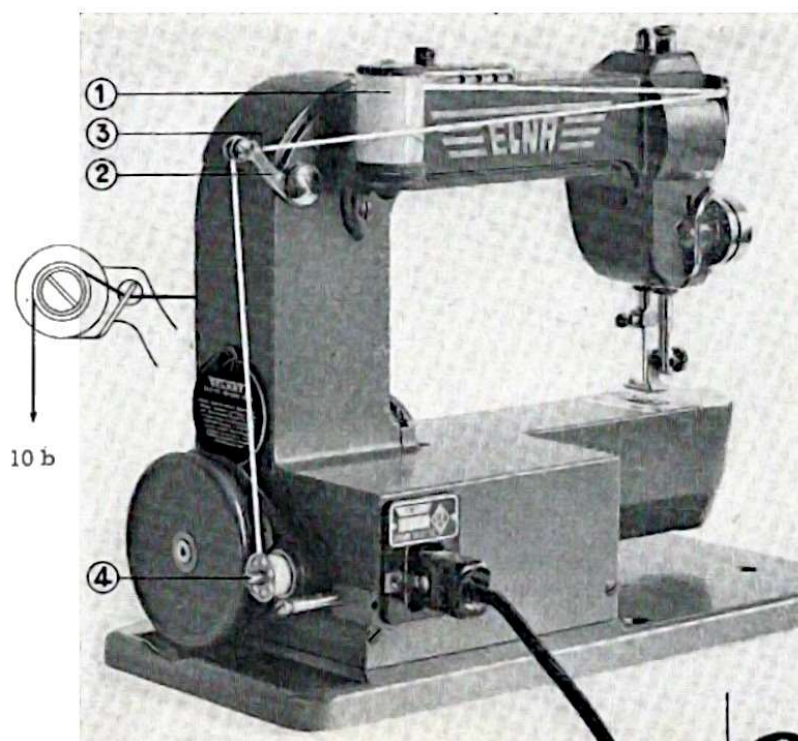


Fig. 10 a

Inserting the bobbin and threading the lower thread

Note : See page 6 part 1.

Open the shuttle cover (1). Ascertain that the shuttle has been lubricated (see page 8). Place the bobbin (2) in the shuttle with the thread unwinding counterclockwise as indicated in Fig. 11 b. While the bobbin is held lightly with one finger of the right hand, with the left hand feed the thread through the slot above the regulating screw of the lower thread tension. Then pull the thread further to the back along the upper edge of the open arm until it is caught in the little hook of the lower tension spring.

Draw about 6 inches of thread off the bobbin to the rear of the machine and close the shuttle cover.

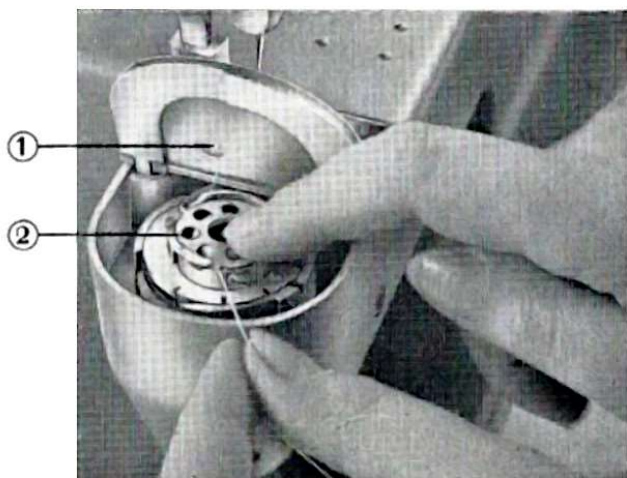
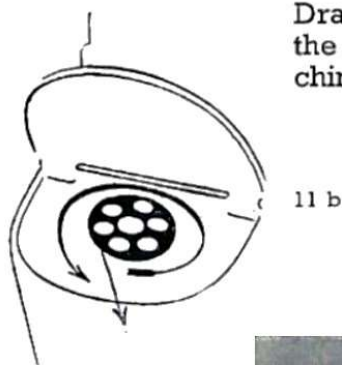
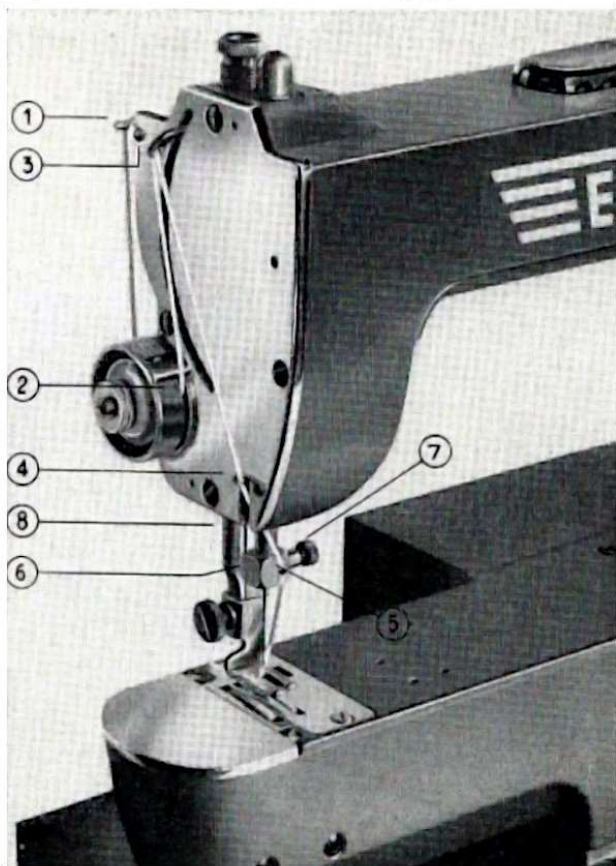


Fig. 11 a

Inserting the needle and threading the upper thread

By rotating the fly wheel towards you, bring the needle clamp (6) to its highest position. Loosen the tension screw (7) a little and insert the needle (**Syst. 705 and 705 A**) in the needle clamp as far as it will go **with its flat side facing left**. Then tighten the screw with the screw-driver. Leave the thread take-up lever and presser foot in the highest position. Take the thread from the spool and pass it through the thread guide (1), through the groove of the thread tension device (2), through the hole in the thread take-up lever (3), the thread guides (4) and (5), and finally through the eye of the needle **from right to left**. Allow for a free length of thread of about 6 inches. (Notice the thread cutter (8).)



Drawing up the lower thread

With the presser foot in its highest position open the shuttle cover, holding the end of the upper thread in the left hand. With the right hand turn the fly wheel towards you far enough to bring the thread take-up lever once again to its highest position. Bring lower thread to the surface by pulling upper thread. Then pass them both back under the presser foot leaving a free length of about 6 inches.

Be sure that the lower thread passes across the bobbin, as shown in Fig. 13 b, then close the cover.

Once the machine has been prepared for sewing in this way, under no circumstances should it be set in motion without cloth to sew, otherwise tangling of the thread will result.

Once the length of stitch and tension of thread are adjusted, put the sewing on the machine, pierce the cloth with needle by turning the fly wheel by hand, lower the presser foot and set the machine in motion by applying slight pressure to the knee lever.

Before removing work bring the needle and the thread-take-up-lever to their highest positions, lift the presser foot and withdraw work backwards away from presser foot.



Fig. 13 a

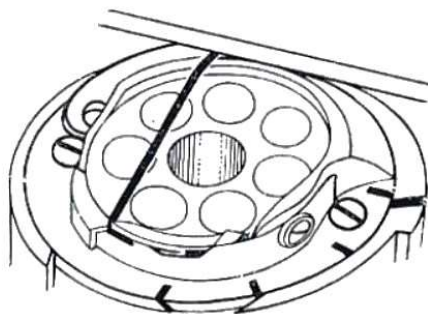


Fig. 13 b

Table of needles and threads for sewing and darning

Needle System 705 should be used exclusively. For sewing, dull thread is preferable. For darning we recommend left-spun yarn.

Principal kinds of materials	Needle No.	Thread	Stitch length
VERY THIN MATERIALS :			
Muslin	60		1 - 2
Cambric	8 *		
Linen			
THIN MATERIALS :			
Calico	70		1 - 2
Linen			
Cotton	10 *		
Silk			
Shirting			
			Fine under-wear, handkerchiefs, etc.
THIN TO MEDIUM MATERIALS :			
Poplin	80		1 1/2 - 2 1/2
Calico			
Silk	12 *		
			Men's shirts, various under-wear, ladies' dresses
MEDIUM MATERIALS :			
Shirting	90		1 1/2 - 2 1/2
Calico	14 *		
Cotton			
			Bedding, etc.
THICK MATERIALS :			
Calico	100		2 - 3
Woollen materials			
Silk materials	16 *		
Cotton			
Linen			
			All sorts of clothes for women, linen sheets, blankets
VERY THICK MATERIALS :			
Woollen materials	110		2 - 3
Men's suiting	18 *		
Corsets			
			Overcoats, Boys' and Men's suits
Darning women's stockings	70		0
	10 *		

* Old needle specifications

Regulating the stitch length

To prepare the machine for forward sewing, loosen the screw (1) set the lever (2) at the desired stitch length number (1-short stitch, 2 and 3 medium, 4- long), and tighten the screw again. To obtain the same stitch length in reverse, push the lever to the opposite side as far as it will go.

The stitch length should be selected in accordance with the thickness of the material to be sewn. (See table on pages 18 and 23.) There is no connection between the stitch length and the thread tension.

For darning, set the lever at "O".

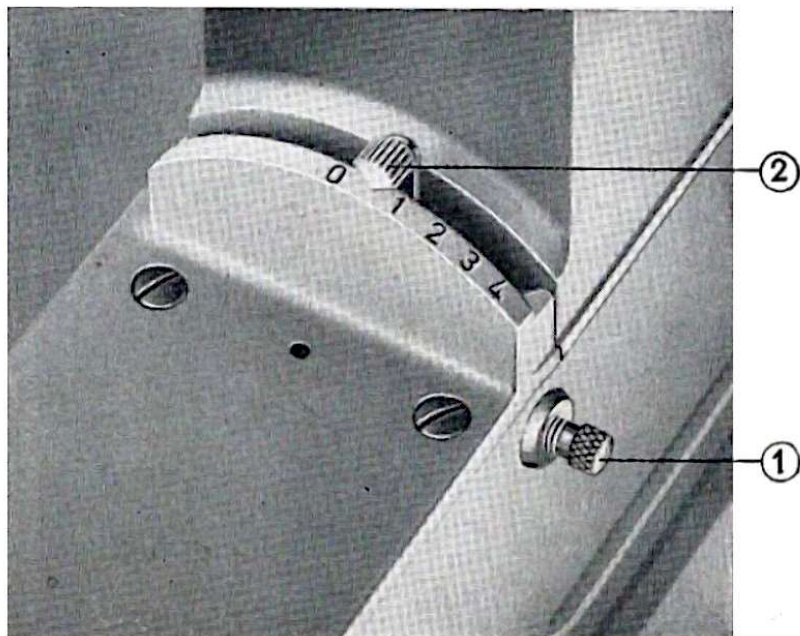


Fig. 14

Regulating the thread tension

The machine is adjusted in the factory for sewing materials of medium thickness.

A seam sewn by the machine may appear as follows :

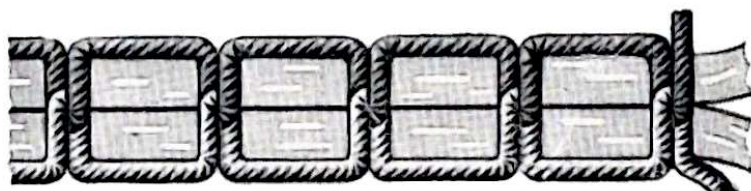


Fig. a

Correct.

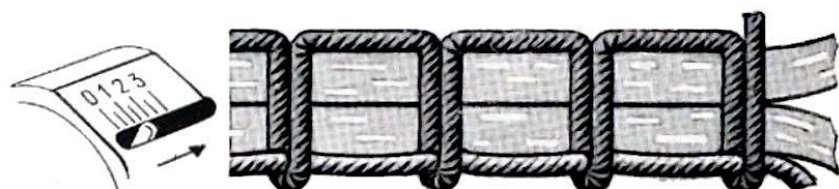


Fig. b

Incorrect : Increase tension of upper thread (arrow pointing to 3).

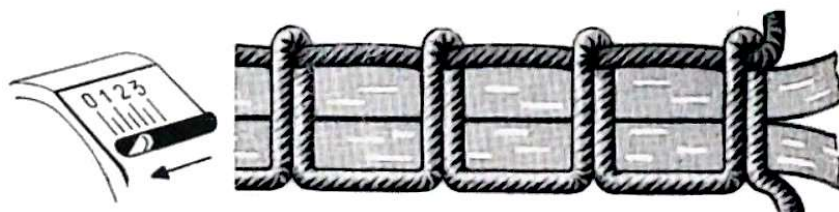


Fig. c

Incorrect : Decrease tension of upper thread (arrow pointing to 0).

Fig. 18

Fig. a shows a perfect seam. Both threads cross each other between the two materials.

Fig. b shows a seam with the tension of the upper thread too loose. The lower thread stays taut, whereas the upper thread goes through the whole thickness of the material. In this case the tension of the upper thread must be increased.

Fig. c shows a seam with the tension of the upper thread too tight. The upper thread stays taut, whilst the lower thread goes through the whole thickness of the material. In this case the tension of the upper thread must be decreased.

In order to obtain a correct seam as in Fig. a, it is sufficient to regulate the tension of the upper thread.

Adjusting the tension of the lower thread

The tension of the lower thread on every machine leaving our factory, is adjusted by means of a calibrated instrument and should therefore not be altered. In order to obtain a correct seam, it is sufficient to regulate the tension of the upper thread.

Adjusting the tension of the upper thread

Loosen or tighten the tension nut (1) on the upper thread regulating device. A small pointer indicates the tension on the scale.

When executing various kinds of work it is recommended that you note in the blank column of the table on page 23, the various tensions used. This is a useful ready reference for future purposes.

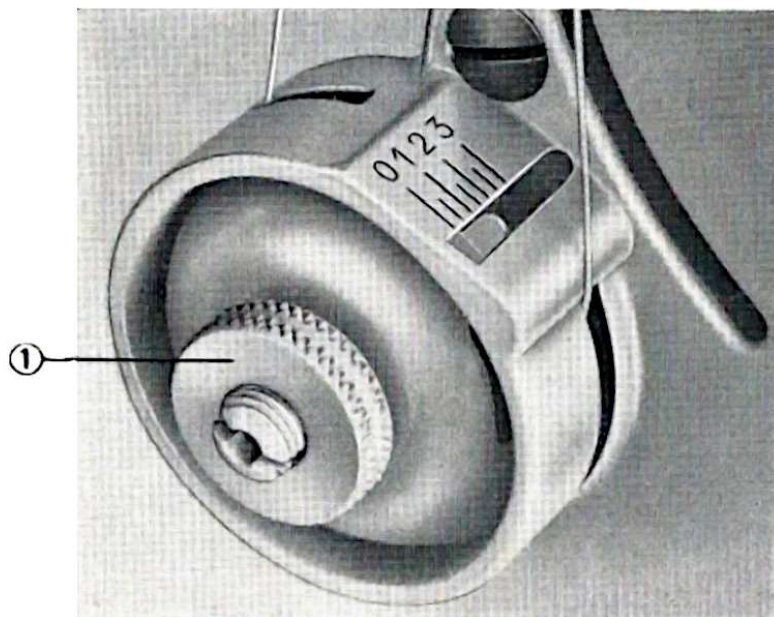


Fig. 16

Table for the regulation of the thread tension

This table gives a basis for the correct regulation of the tension of the upper thread. Small deviations are possible according to the kind of material and thread used.

Kind of Work	Upper thread tension		Stitch Length	Needle No.	Foot
	Medium	Exact			
Heavy Sewing				100 16 *	Mobile presser foot
Normal Sewing	1-2		1-3	90 14 *	Presser foot or mobile sewing foot
Fine Sewing	$\frac{1}{2}$ -1		1-2	70 10 *	Presser foot or mobile sewing foot
Darning	0- $\frac{1}{2}$		0	70 10 *	Darning foot and darning plate
Hemstitching	1 $\frac{1}{2}$ -2		0	70 10 *	Darning plate
Embroidering	$\frac{1}{2}$ -1		0	70 10 *	Darning plate
Gathering	1-2		2-3	90 14 *	Ruffler
Gathering with elastic thread**	2-3		4	90 14 *	Presser foot or mobile sewing foot

* Old needle specification.

** Pay attention to the directions for use given with the elastic thread you purchase. (With the Elna machine there is no need to change the tension of the lower thread.)

How to use the various attachments

The various interchangeable attachments permit you to perform with ease a wide selection of special sewing chores on the ELNA.

By loosening the screw (2) each attachment can be slid onto the cloth presser bar (1) (Fig. 17).

Make sure that the attachment is well placed, then tighten the screw with the screw driver.

The attachments indicated with an asterisk (*) are included in the basic price of the ELNA.

The other attachments may be purchased from us on request.

Standard attachments

* Presser foot

Application : Any kind of ordinary sewing.

After loosening the screw (2) the presser foot can be slid onto the cloth presser bar. See that the presser foot is fitted properly, then tighten the screw with the screw-driver.

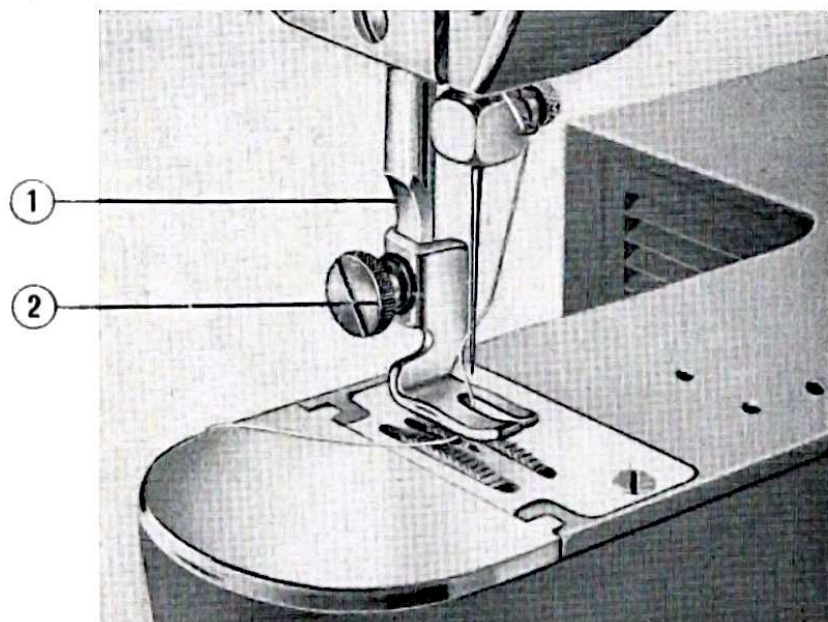


Fig. 17

*** Mobile presser foot**

Application : Any kind of ordinary sewing, but in particular that of material of varying thickness.

The mobile foot is attached exactly in the same manner as the normal presser foot.

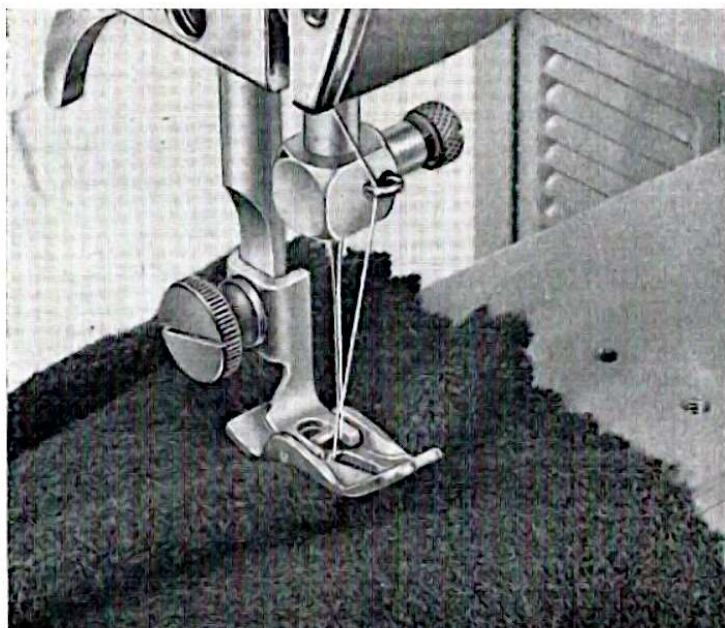


Fig. 18

* Darning foot

Application : All kinds of darning.

The best results are obtained with left-spun yarn.

Place the stitch regulating lever at 0. Cover the feed dog with the darning plate. Bring the needle clamp, without the needle, to its lowest position, then put the darning foot onto the cloth presser bar from behind and fasten it with the aid of the screw-driver. When the darning foot is correctly attached, the lever (1) should be **behind** the screw of the needle clamp. **Upper thread tension : 0 to 0.5.**

When there are large holes to be mended, it is advisable to stretch the cloth on a hoop. **When darning stockings they should be slid over the free arm (2)** and spread with the fingers. It is advisable to begin by moving the material left and right, then up and down.

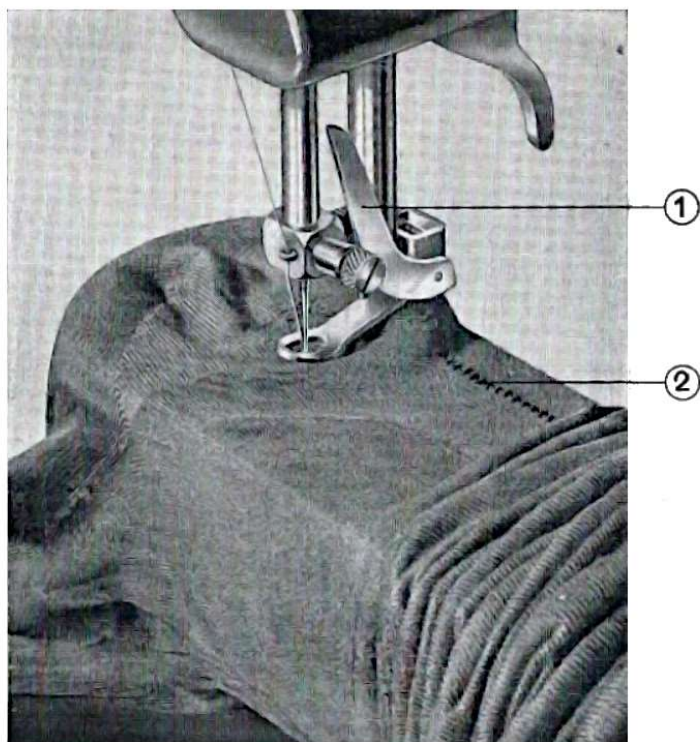


Fig. 19

* **Hemming foot** (width 4 mm)

In order to make a hem, begin by making an 1/8-inch fold about 6 inches long to the edge of the material to be hemmed. Introduce this folded edge, from left to right, into the spiral of the hemming foot and then fold it once again in the spiral. Draw the material slowly towards you until the needle can enter the beginning of the hem. Introduce the needle into the material and lower the foot; stretch the material in front of the foot with the right hand and behind the foot with the left hand, then set the machine in motion. To obtain a perfect hem the spiral should always be well filled with the material. (Fig. 20 a).

A longer stitch than that for plain sewing should be chosen (2,5 - 3).

Braid can be simultaneously sewn while hemming. To do this introduce the end of the braid into the lateral slot of the hemming foot. (Fig. 20 b).

Hemming feet for hems of 2 and 6 mm, which are delivered as special accessories, are used in the same manner as above adapting the width of the first fold to the size of the respective spiral.

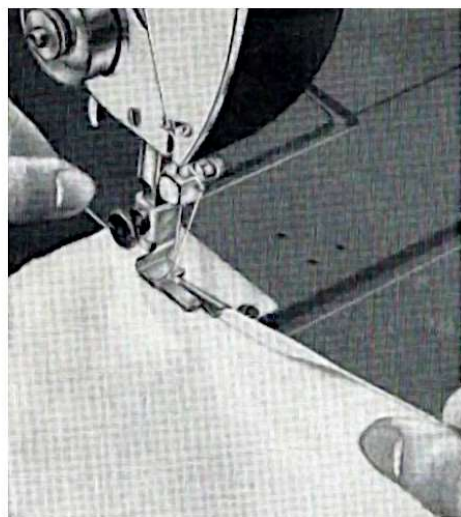


Fig. 20 a

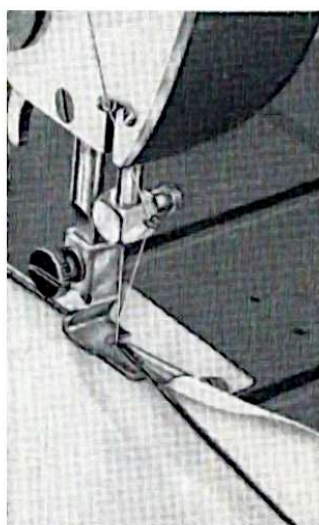


Fig. 20 b

Special attachments

Hemmer-felling foot

Application : Flat seams : neatly joining two pieces of material.

A flat seam is formed by running the work through the hemmer felling foot twice. Place the two pieces of material to be joined one on top of the other, the bottom piece slightly overlapping the top piece. Fold this lap over on to top piece of material on a length of about 1 inch, it will automatically pass through the half spiral of the hemmer feller when sewing. Thus the bottom piece of material is folded once and sewn to the top piece. Unfold the two pieces of material and flatten the seam. Run the ridge formed by the first seam through the hemmer feller once again. This will fell the seam. Guide the second row of stitches by following the first row with the inside of the projecting part of the hemmer felling foot.

It is advisable to use a longer stitch for this operation than is usual for normal sewing (2.5-3).

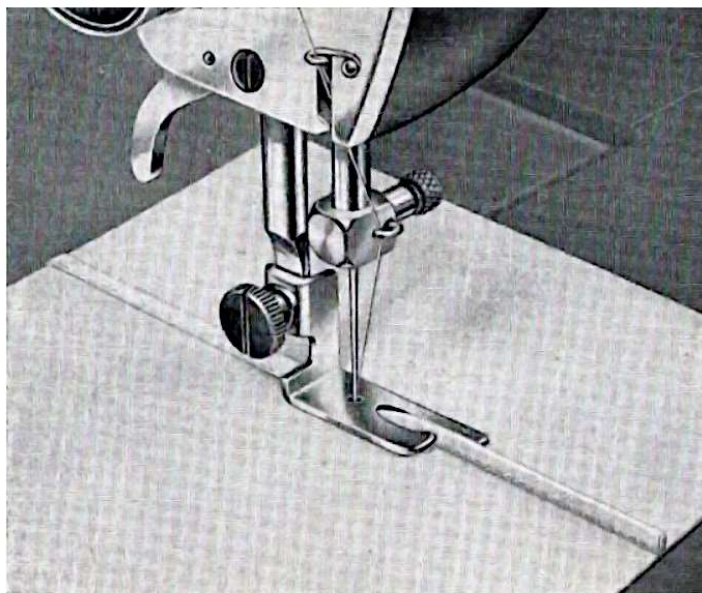


Fig. 21

Quilting foot

Application : Quilting.

This foot is attached in the same manner as the presser foot. Start by sewing the first quilting seam across the middle of the work according to design. Then, by loosening and retightening the screw (1) adjust the quilting guide to the distance required and sew next seam with guide gliding lightly over the preceding seam. In no case should the guide press against the work.

Stitch length : 3-4.

Application : Insertion of cords.

Sew a first seam then insert cord between the two pieces of material and adjust guide according to the width of the cord.

Application : Without guide.

For work with raised edges, for sewing seams very close to one another.

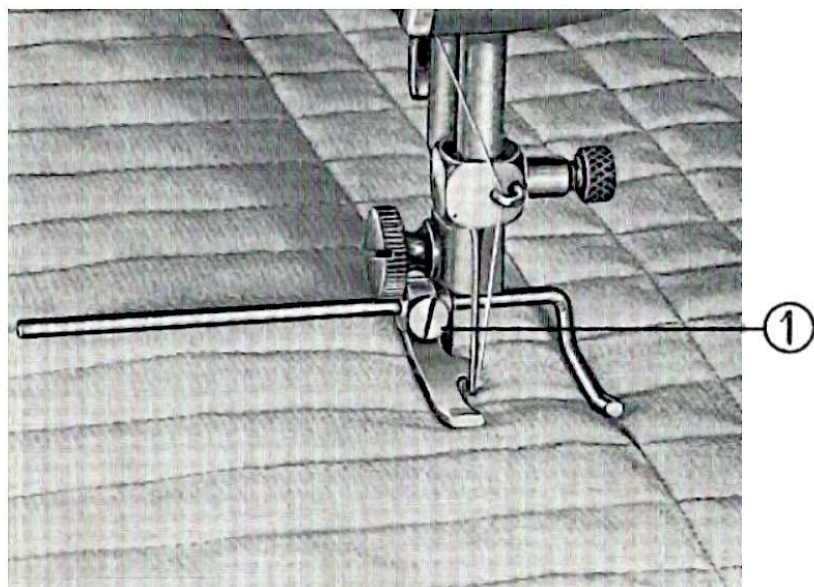


Fig. 22

Braiding foot

Application : Sewing on braid.

The braiding foot is attached exactly in the same manner as the presser foot. It is adjustable and permits working with different widths of braid. The end of the braid is passed through the braid guide and brought beneath the needle. In the beginning the sewing should be carried out slowly, so as to be able to follow the design the more accurately.

With thin materials it is advisable to place a piece of paper under the sewing in order to avoid gathering.

For intricate designs it is advisable to make use of the **speed reducer**.

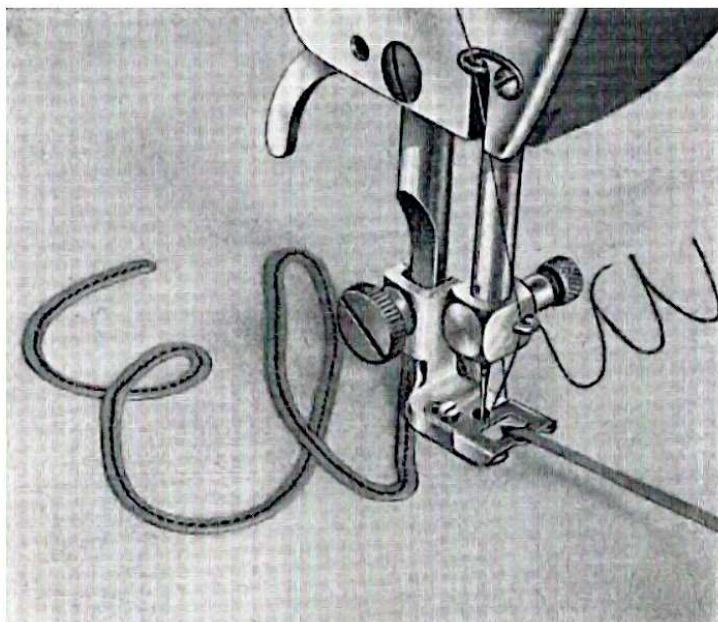


Fig. 23

Ruffler

Application : For gathering, shirring, ruffling.

This foot is attached in the same manner as the presser foot. The material to be gathered should be placed under the foot as for normal sewing. The upper tension should be tight and the stitch as long as possible. When sewing the gathers will form automatically.

Application : Gathering one material and sewing it to another simultaneously.

Same procedure as above and insert second piece of material in the slot (1) of the foot. When sewing retain top piece of material more or less according to the denseness of the gathers required.

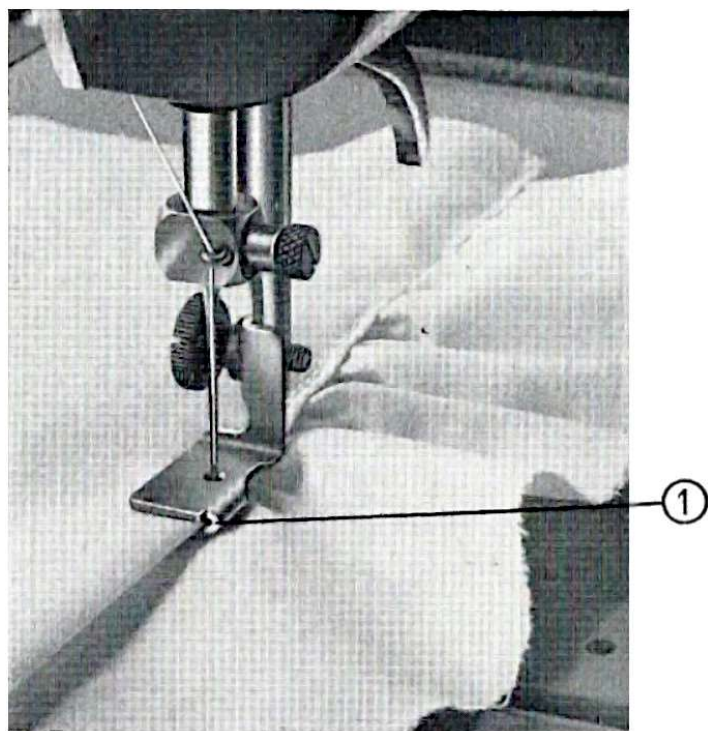


Fig. 24

Special accessories

Speed reducer

This accessory should be used **whenever the work of the machine is to be slowed down considerably**. This is, for instance, the case with embroidery work. Before sliding the reducer onto the axles (1) and (2), one or two drops of oil should be placed on the axle (2). The cogs can easily be fitted into each other by slightly turning back and forth the small spur gear on the motor axle.

Should the reducer no longer be required, it may simply be pulled off and the machine will run normally again.

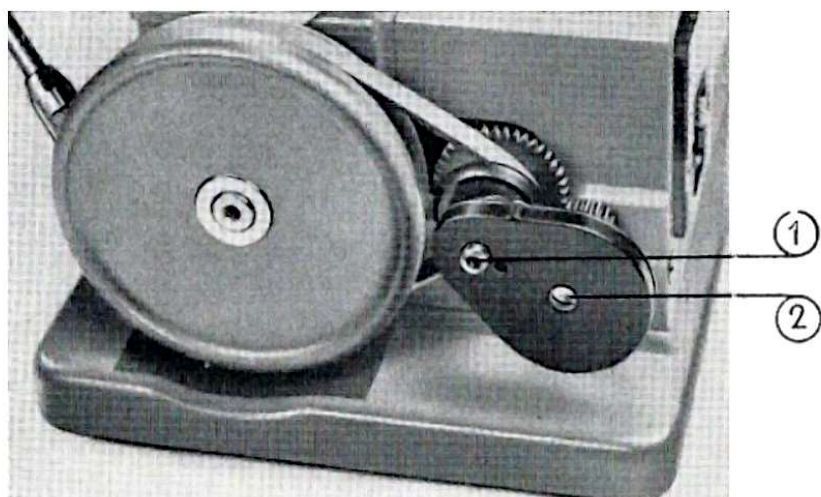


Fig. 25

Embroidering

Put the **stitch length adjustment lever** in the 0 position and tighten the stop screw slightly.

Cover the feed dog with the **darning plate**. Remove the **presser foot**, move the lever downwards so that the cloth presser bar is in the lowest position, and attach the **speed reducer**.

Stretch the material to be embroidered on an **embroidery frame**.

Move the frame slowly back and forth, thereby covering the pattern with stitches of unequal length, alternately making one stitch inside and one on the border of the pattern. Once the border of the pattern is well covered, fill in the remainder with alternate long and short stitches.

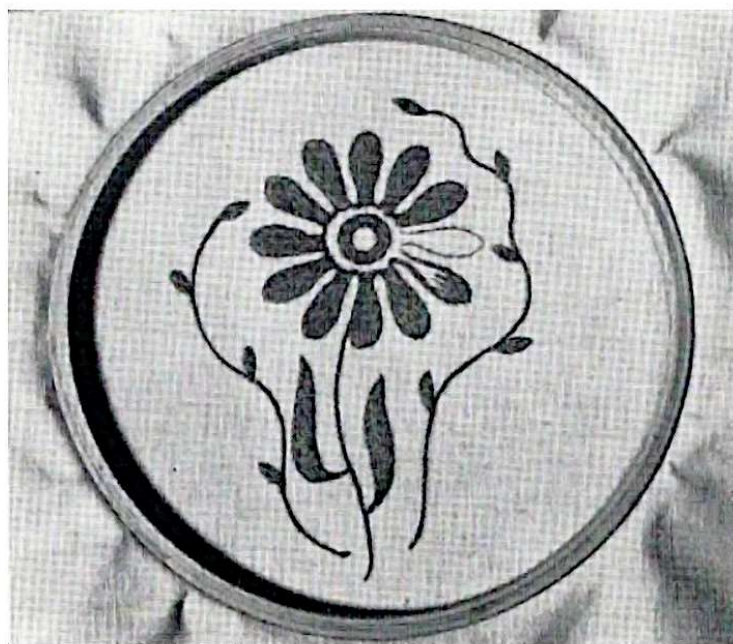


Fig. 26

Minor disorders and their remedies

The following minor disorders may easily be avoided by adhering to the directions for the use of your machine.

The thread breaks

Cause :

Remedy :

The upper thread or the needle is incorrectly threaded.

Re-read the instructions for threading.

The upper thread tension is wrong.

Regulate the thread tension.

The needle is bent.

Replace the needle.

Inferior quality of needle.

Replace the needle.

Unsuitable darning thread.

Use left-spun thread.

The thread or yarn is too dry.

Thread and yarn should be kept in a cool place, and should not be exposed to the sun.

The thread thickness does not correspond to that of the material.

Study the needle and thread table (p. 18).

The shuttle is dry.

Lubricate it with two to three drops of kerosene.

The machine is cluttered with dirt.

Remove throat plate and clean the machine.

The seam is not neat

Cause :

The upper thread tension is incorrect.

The upper or lower thread is wrongly threaded.

The shuttle runs badly.

The wrong thickness of needle or thread has been chosen.

Remains of thread are stuck between the plates of the upper thread tension device.

Remedy :

Regulate the thread tension.

Re-thread according to the instructions.

Lubricate it with a few drops of **kerosene**.

Study the needle and thread table (p. 18).

The remains of thread should be removed with the aid of a needle.

The machine omits stitches

Cause :

The needle is bent.

The thickness of the needle does not correspond to the thread or the material.

Remedy :

Replace the needle.

Study the needle and thread table (p. 18).

The material is badly conveyed

Cause :

The throat plate is not correctly placed.

Remedy :

Press the throat plate downwards till it catches.

The needle breaks

Cause :

The upper thread tension is too tight.

The needle is bent.

The size of the needle does not correspond with the thread or the material.

The material is pulled or held back during sewing.

The needle is not correctly fastened.

Remedy :

Regulate the tension.

Replace the needle.

Study the needle and thread table (p. 18).

Convey the material gently only.

Tighten the screw with the screw-driver.

The machine runs slowly

Cause :

The machine has not been oiled for some time, or the shuttle lubricated with kerosene.

There are remains of thread and dust under the throat plate and in the shuttle.

The machine is too cold.

The oil is too thick.

Remedy :

Oil the machine, and lubricate the shuttle with **kerosene**.

The feed dog and the shuttle should be cleaned.

Before using, the machine should remain in a warm room for some time.

Use ELNA oil.

The machine runs when winding the bobbin

Cause :

The motor axle is covered with remains of thread.

Remedy :

Clean away the threads.

The shuttle makes too much noise

Cause :

The shuttle is too dry.

There are remains of threads or dust in the shuttle.

Remedy :

Lubricate with **kerosene**.

Clean with a brush and then lubricate with **kerosene**.

The shuttle is blocked

Cause :

Remains of threads are stuck in the shuttle.

Remedy :

The fly wheel should be moved backwards and forwards by hand despite the great resistance, in order to cut up the threads. Let the machine run freely after the remains of the threads have been removed, and then lubricate the shuttle with **kerosene**.

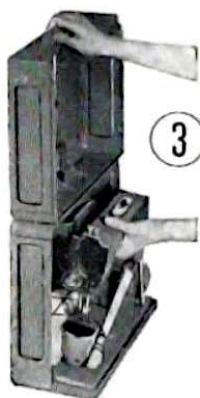
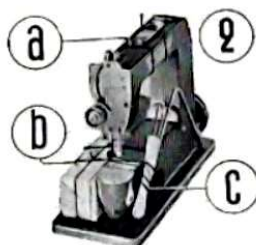
How to prevent thread from getting tangled in the shuttle

1. Never start the machine when threaded without cloth to sew.
2. At the beginning of a seam draw or hold both the upper and the lower thread backwards under the sewing foot.
3. When finishing a seam, move the thread take-up lever to its highest position and only then withdraw the sewing backwards.

Guarantee

Always keep the certificate of guarantee in the pocket on the inside of the back cover.

The guarantee is not valid if the machine is improperly treated, or if alterations or repairs have been carried out on it by third persons. Please adhere to the simple rules and instructions for use in this booklet, and apply to us whenever anything is out of order.



- 1 Wind the electric cord on its holder and fix the free end.

- 2 a) Fasten lamp cover with a string. b) Put all the accessories in the box with the exception of the oil tube and the kerosene bottle and fill all empty spaces with paper. Wrap the accessory box in a paper and tie it to the free arm.

- 3 Place machine in the case.

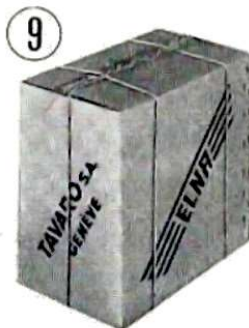
- 4 Lay case on a table and fix the machine to the bottom of the case using the two wooden slats and the four fixation screws with washers. (No tools necessary.)



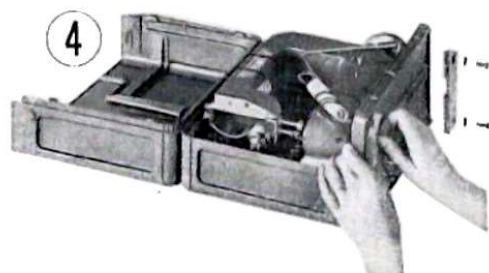
- 5 With the help of a screwdriver tighten first lightly and then one by one definitely the 4 screws.

- 6 Close the case.

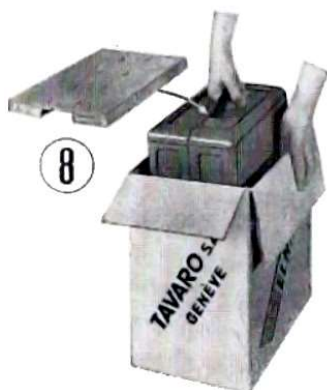
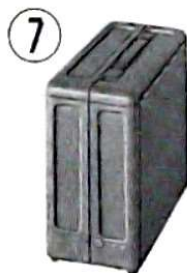
- 7 Put case upright.



Packing of the machine to be forwarded



c) Wrap the knee control lever with paper and tie it to the free arm.



8 Place case in the cardboard box and put corrugated protection cover on it. If the machine is sent to the store for repairs, enclose a letter indicating nature of disorders.

9 Close cardboard box and tie it.

